CLAIMS

1. A circuit board having an insulator layer and a conductor buried inside said insulator layer, said circuit board characterized in that

said insulator layer comprises a first insulator satisfying a relationship of $\mu r \geq \varepsilon r$ given that a relative permittivity is εr and a relative permeability is μr, and said conductor is substantially surrounded by said first insulator.

2. A circuit board according to claim 1, characterized in that

said insulator layer further comprises a second insulator not satisfying the relationship of $\mu r \geq \varepsilon r$, said conductor is substantially surrounded by said second insulator, and said second insulator is substantially surrounded by said first insulator.

3. A circuit board according to claim 1, characterized in that

said insulator layer further comprises a second insulator not satisfying the relationship of $\mu r \geq \varepsilon r$, a part of said conductor is substantially surrounded by said second insulator, and said second insulator and said conductor are substantially surrounded by said first insulator.

4. A circuit board according to claim 1, characterized in that

a predetermined number N (N is an integer equal to or greater than 2) of conductors are buried inside said insulator layer,

said predetermined number N of said conductors are substantially surrounded by a predetermined number N of first insulators, respectively, and

said predetermined number N of said first insulators are partitioned therebetween by second insulators not satisfying the relationship of $\mu r \geq \varepsilon r$.

5. A circuit board according to claim 1, characterized in that

said first insulator is formed by mixing a magnetic substance into an inorganic substance or an organic SOG.

6. A circuit board according to claim 5, characterized in that said inorganic substance is an inorganic SOG, silica, alumina, aluminum nitride, silicon nitride, or ceramics.

7. A circuit board according to claim 5, characterized in that said magnetic substance is an insulator, or a simple substance or an alloy of magnetic metal elements.

8. A circuit board according to claim 1, characterized in that said first insulator contains a synthetic resin and a magnetic substance.

9. A circuit board according to claim 8, characterized in that said synthetic resin is at least one resin selected from the group consisting of an epoxy resin, a phenol resin, a polyimide resin, a polyester resin, a fluorine resin, a denatured polyphenylether resin, a bismaleimide triazine resin, a denatured polyphenylene oxide resin, a silicon resin, a benzocyclobutene resin, a polyethylene naphthalate resin, a polycycloolefin resin, a polyolefin resin, a fluorocarbon polymer, a cyanate ester resin, a melamine resin, and an acrylic resin.

10. A circuit board according to claim 8, characterized in that said magnetic substance is an insulator, or a simple substance or an alloy of magnetic metal elements.

11. An electronic device comprising the circuit board according to any of claims 1 to 10.

12. A circuit board characterized by comprising an insulator layer having opposing first and second main surfaces, and a first and a second wiring layer formed on said first and second main surfaces of said insulator layer, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr.

13. An electronic device characterized by comprising a circuit board which comprises an insulator layer having opposing first and second main surfaces, and a first and a second wiring layer formed on said first and second main surfaces of said insulator layer, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr.

14. An electronic device according to claim 13, characterized by comprising a battery and receiving a power supply from said battery to operate.

15. An electronic device according to claim 13, characterized by comprising a battery and being adapted to operate by receiving a power supply from said battery without receiving a power supply from an external power supply.

16. An electronic device according to any of claims 13 to 15, characterized by comprising radio wave emission means.

17. An electronic device according to any of claims 13 to 15, characterized by comprising an arithmetic processing section (CPU) and a storage section (memory).

18. A method of producing a circuit board comprising an insulator layer having a hole, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said method characterized by comprising:

a step of performing ultrasonic cleaning of the inside of said hole by the use of ozone-containing acid pure water in which pH is adjusted to an acid region by adding O_3 and CO_2 into pure water; and

a step of performing ultrasonic cleaning by the use of hydrogen-containing alkaline pure water in which pH is adjusted to an alkaline region by adding H_2 and NH_3 into pure water.

19. A method of producing a circuit board comprising an insulator layer having a hole, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said method characterized by comprising:

a step of forming said hole in said insulator layer by the use of a laser beam having a wavelength of 400nm or less.

20. A method of producing a circuit board comprising an insulator layer having a hole, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said method characterized by comprising:

a step of forming said hole in said insulator layer by the use of a laser beam of 700nm or more.

21. A circuit board characterized by comprising an insulator layer having opposing first and second main surfaces and a hole connecting between said first and second main surfaces, and a first and a second wiring layer formed on said first and second main surfaces of said insulator layer, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said circuit board further comprising an electrical connection member formed on an inner surface of said hole so as to contact said first and second wiring layers for electrically connecting between said first and second wiring layers.

22. A circuit board comprising a first insulator layer having opposing first and second main surfaces, a first and a second wiring layer formed on said first and second main surfaces of said first insulator layer, a second insulator layer formed on said second wiring layer, and a third wiring layer formed on a surface of said second insulator layer opposite to its side contacting said second

wiring layer, wherein at least one of said first and second insulator layers is formed with a hole connecting the two or more layers optionally selected from said first to third wiring layers, said circuit board characterized in that at least a part of said first and second insulator layers satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said first and second insulator layers is εr and a relative permeability thereof is μr, said circuit board further comprising an electrical connection member inside said hole for electrically connecting together the two or more layers optionally selected from said first to third wiring layers.

23. An electronic device characterized by comprising a circuit board which comprises an insulator layer having opposing first and second main surfaces and a hole connecting between said first and second main surfaces, and a first and a second wiring layer formed on said first and second main surfaces of said insulator layer, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said circuit board further comprising an electrical connection member formed on an inner surface of said hole so as to contact said first and second wiring layers for electrically connecting between said first and second wiring layers.

24. An electronic device according to claim 23, characterized by comprising a battery and receiving a power supply from said battery to operate.

25. An electronic device according to claim 23, characterized by comprising a battery and being adapted to operate by receiving a power supply from said battery without receiving a power supply from an external power supply.

26. An electronic device according to any of claims 23 to 25, characterized by comprising radio wave emission means.

27. An electronic device according to any of claims 23 to 25, characterized by comprising an arithmetic processing section (CPU) and a

storage section (memory).

28. An electronic device characterized by comprising a circuit board which comprises a first insulator layer having opposing first and second main surfaces, a first and a second wiring layer formed on said first and second main surfaces of said first insulator layer, a second insulator layer formed on said second wiring layer, and a third wiring layer formed on a surface of said second insulator layer opposite to its side contacting said second wiring layer, wherein at least one of said first and second insulator layers is formed with a hole connecting the two or more layers optionally selected from said first to third wiring layers, and at least a part of said first and second insulator layers satisfies a relationship of $\varepsilon r \leq \mu r$ given that a relative permittivity of said first and second insulator layers is εr and a relative permeability thereof is μr, said circuit board further comprising an electrical connection member inside said hole for electrically connecting together the two or more layers optionally selected from said first to third wiring layers.

29. An electronic device according to claim 28, characterized by comprising a battery and receiving a power supply from said battery to operate.

30. An electronic device according to claim 28, characterized by comprising a battery and being adapted to operate by receiving a power supply from said battery without receiving a power supply from an external power supply.

31. An electronic device according to any of claims 28 to 30, characterized by comprising radio wave emission means.

32. An electronic device according to any of claims 28 to 30, characterized by comprising an arithmetic processing section (CPU) and a storage section (memory).

33. A circuit board characterized by comprising an insulator layer, wherein at least a part of said insulator layer satisfies a relationship of $\varepsilon r \leq \mu r$

given that a relative permittivity of said insulator layer is εr and a relative permeability thereof is μr, said at least a part of said insulator layer is in the form of an insulator and a magnetic substance dispersed into said insulator, and a material of said magnetic substance is a simple substance or an alloy of magnetic metal elements.